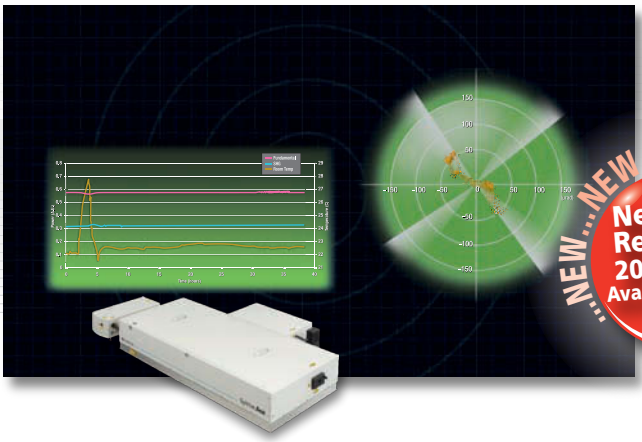
Newport Spectra-Physics Newsletter

N° 33 April 2011

Solutions to Make, Manage and Measure Light℠



Introducing the Spectra-Physics Spitfire® Ace™ Ultrafast Amplifier

Industry Leading Power. Guaranteed Stability.

▶ page 5

New Vision IsoStation™ Equipment Platform

Designed specifically to improve ease–of–installation, set-up and lab space utilization.

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Introducing NSTRUCT™ instrument management software platform

Created to simplify instrument and experiment setup and use.

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Spectra-Physics celebrates 50 years as the pioneer of the laser industry

▶ page 4

50 YEARS 1961-2011 Spectra-Physics A Newport Corporation Brand

CUSTOMERS APPLICATIONS

MAKE LIGHT

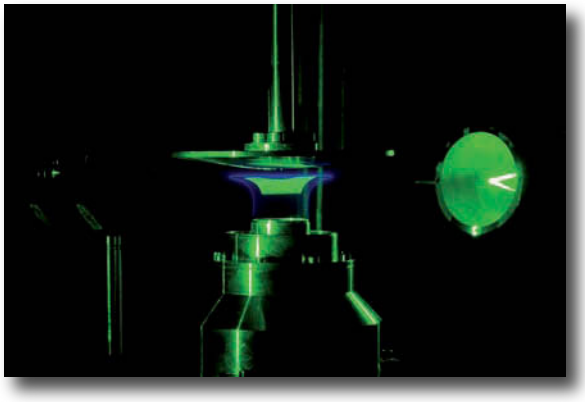
MANAGE LIGHT

MEASURE LIGHT

PHOTONIC APPLICATION

CUSTOMER APPLICATIONS

Spectra-Physics Lasers Assist Combustion Research



LASERS

The use of Sirah dye lasers and Quanta-Ray® pulsed YAG lasers is integral to the research work being undertaken at the Institute of Reactive Flows and Diagnostics headed up by Professor Dreizler at the Center of Smart Interfaces, Cluster of Excellence at the Technische Universität Darmstadt in Germany. In his opinion, the Spectra-Physics lasers are superior in the market.

The aim of the facility is to research chemically reactive flows in high temperature reacting systems, such as flame structures and low temperature plasmas. Chemically reactive flows play a major role in many technical processes in energy engineering like combustion processes in technical firing, gas turbines and internal combustion engines.

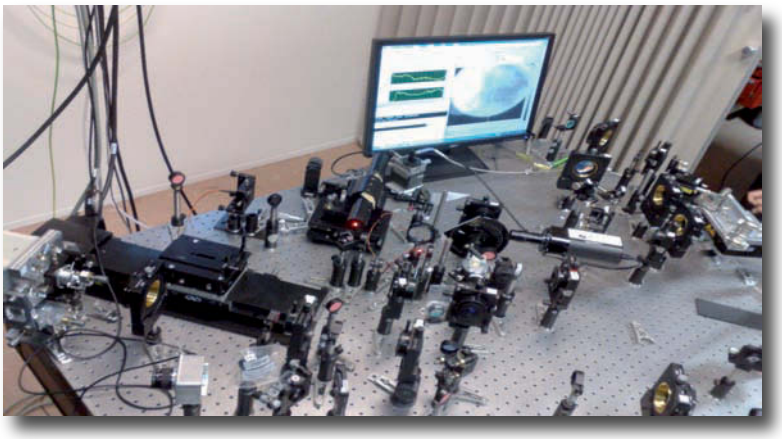
Professor Dreizler's first Quanta-Ray laser was installed over 20 years ago and is still a crucial component in his research. In order to get a wider wavelength range, Professor Dreizler invested in Sirah dye lasers a few years ago. These lasers offer excellent mechanical design and robustness, leading to unprecedented thermal stability and reproducibility. According to the Professor, the choice of the Spectra-Physics solutions was obvious, as he explains. "The Spectra-Physics Quanta-Ray product family is renowned for its stability and durability; this is proven in our lab by the GCR-4 that is still in use after 20 years. At the same time the Sirah dye lasers are robust, stable and reliable. The combination of the Quanta-Ray pump lasers and Sirah dye lasers forms a reliable and flexible workhorse for our studies of reactive flows on a nanosecond scale."

"The most important factor is reliability and this is what the Spectra-Physics laser systems offer," he continues. "The lasers have been invaluable in our work with 2D combustion diagnostics, a field in which we have made enormous progress over the past five years. The future lies in 4D technology and the quality, reliability and efficiency of the lasers will be instrumental in helping us to evolve our research in this direction."

With increasing pressure within the combustion industry to evolve and develop new and energy efficient technology, Professor Dreizler's research is in great demand from a number of sectors, including car manufacturers. "We need to have laser equipment that is compatible with our facilities and that is reliable, fast and accurate," he concludes. "Spectra-Physics products offer all this as well as thermal and mechanical stability."

WEB See our website for more info.
www.newport.com/Quanta_Ray

Tomographic Eye Imaging Enhanced through Advanced Adaptive Optics



Newport has been involved in numerous research and development projects within the medical industry and for the past ten years, has been helping with the supply and adaptation of specialised equipment to a leading French university. The LESIA (Laboratoire d'études spatiales et d'instrumentation en astrophysique) from Observatoire de Paris is one of the largest French research laboratories for astrophysics, and its ground-breaking research project involves the evolution of adaptive optics.

The project is called the Oeil (Eye) Project and its aim is to develop an optical system capable of in-vivo tomographic imaging of the human retina. Adaptive optics allow the compensation of optical aberrations and the research into the field is of major benefit to the medicinal world. The adaptive optics technology was originally developed by astronomers to avoid the effects of atmospheric turbulence by compensating for the random deviation of incoming light using deformable mirrors, and consequently has been adapted by a number of research establishments for use in ophthalmology, the study of the eye.

With such an intensive project, the need for the right equipment was essential and Newport has been heavily involved in adapting its core range of products for use within the laboratory. Researcher, Guillaume Chenegros explains the importance of Newport's role.

"The EYE project team has faced many challenges to progress our research to the stage that we are at today," he comments. "The technology is allowing a reduction in the number and accuracy of scans required in adaptive optics, coupling the tomographic capabilities of optical coherence tomography (OCT) with wavefront correction capabilities of adaptive optics to obtain a high resolution "fundus oculi" imaging. Newport's equipment gives us the high precision that we require to evolve the process.

"We began our relationship with standard products from the Newport catalogue and with close co-operation between both parties, we have gradually adapted the equipment over the years to meet the changing needs of the research."

Newport's solution included supplying motorized micropositioning stages (ILS, XMS), optical table for attenuated vibrations, optical holders, achromatic lenses, other optics and ULTRAlign stages (manual positioners)

The advantage of this long-term relationship between the two parties has been apparent, with a single source supplier for a variety of products making life much easier for the research facility. Newport supplied mapping XMS/XPS, (high precision motion control solution comprising the XMS linear motor stage (guaranteed bi-directional repeatability of 0,08 µm and maximum speed of 300 mm/s) and an advanced XPS multi-axis motion controller. Newport also assisted with its iQ damping system for the Smart Table optical table.

In fact it was only last year after almost a decade of intensive research and development that the assembly work on the Eye project began. The ultimate aim is to get images with a singular resolution so that this can effect earlier diagnosis of any problems.

"We have a very good relationship with Newport as any dimensional problems that we encounter can be solved, thanks to the company's wealth of experience. Working with live tissue means that we have to be totally accurate and the equipment provided by Newport enables us to do this," continues Guillaume.

Spectra-Physics

Lighting the Way

It was 50 years ago this year that Spectra-Physics became the first commercial laser company – the pioneer and catalyst for the laser industry.

Over those 50 years, Spectra-Physics introduced many innovative "Firsts" that have gone on to become industry standards – here are just a few of the many important milestones:

LASERS

1961 First commercial laser company – Spectra-Physics founded

1962 First commercial cw laser – Model 110

1963 First ion laser invented

1968 First commercial model-locked laser – Model 125 / 360

1974 First commercial bar code scanner – Model 750A

1976 First commercial Nd:YAG unstable resonator laser – Quanta-Ray® DCR1

1979 First commercial single-frequency dye laser – Model 380

1983 First high power diode laser manufacturer – SDL joint venture between Spectra-Physics and Xerox PARC

1985 First end-pumped, mode-matched DPSS laser invented

1987 First diode-pumped double-clad fiber laser invented

1988 First commercial cw Ti:sapphire laser – Model 3900

1990 First commercial ultrafast Ti:sapphire laser – Tsunami®

1992 First commercial Q-switched Nd:YVO4 DPSS industrial laser

1993 First commercial Ti:sapphire chirped pulse amplifier system – Spitfire®

1993 First commercial Ti:sapphire synch-pumped OPO – Opal™

1994 First commercial Q-switched UV DPSS industrial laser

1996 First commercial high-power DPSS cw green laser – Millennia® V

1999 First commercial one-box, automated tunable ultrafast laser – Mai Tai®

2000 First commercial mode-locked UV DPSS industrial laser – Vanguard™

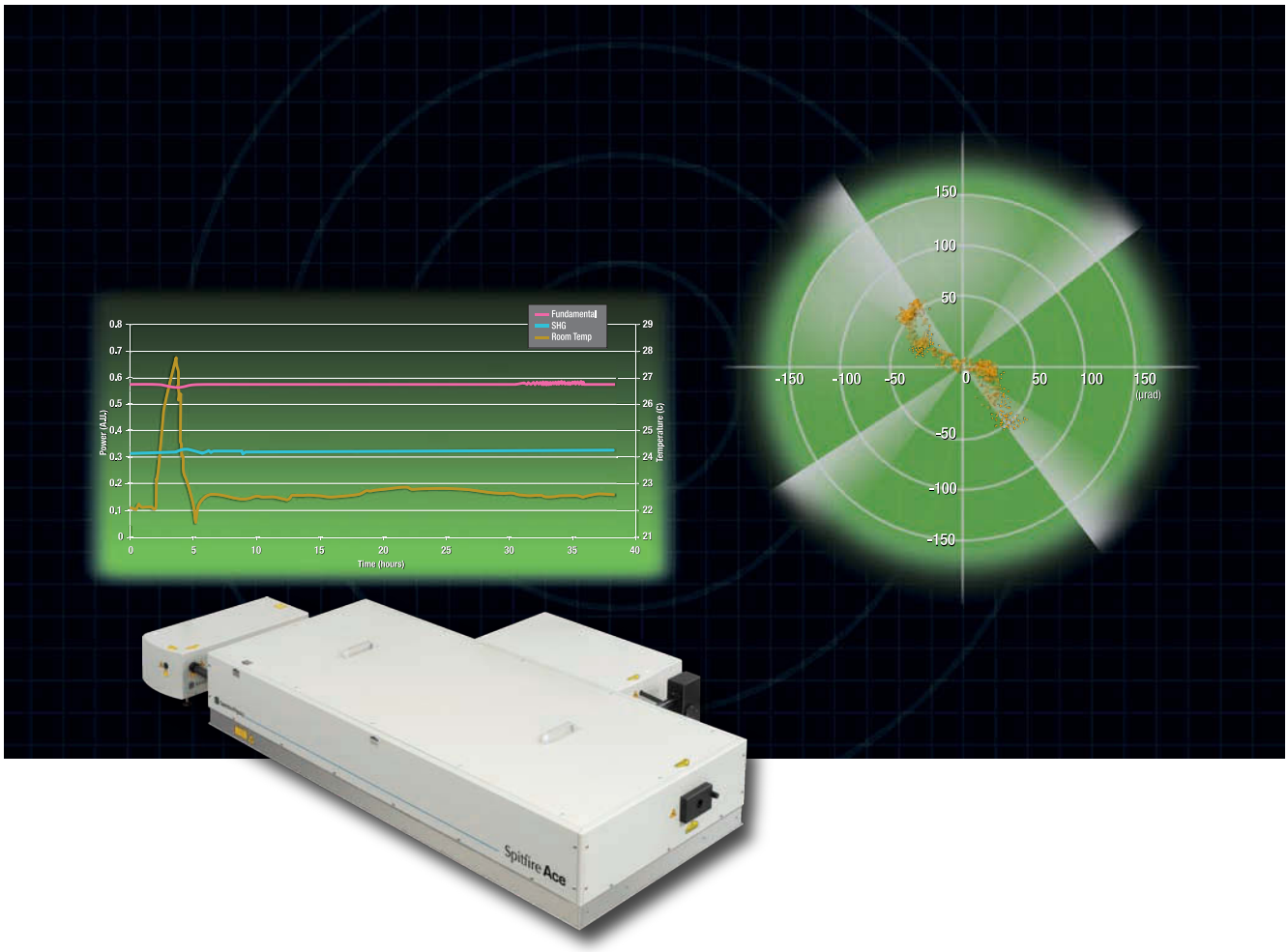
2007 First automated dispersion compensated, tunable ultrafast laser – Mai Tai DeepSee™

2009 First automated, adjustable bandwidth short pulse seeder – Mai Tai SP

2010 First commercial all-in-one Q-switched mid-power green DPSS laser – Explorer® XP

MAKE LIGHT

Spectra-Physics | Spitfire® Ace™ Ultrafast Amplifier



The Spectra-Physics Spitfire® Ace™ amplifier is the most technically-advanced, ultrafast regenerative amplifier commercially available. Built upon our highly successful Spitfire platform, it sets a new standard for long term performance, low noise, and day-to-day reproducibility, resulting in stable OPA and harmonic outputs for the most demanding applications. Every component has been carefully evaluated and selected to maximize stability. The revolutionary XP regenerative cavity has been upgraded to produce an industry leading average power of more than 5 W at 1, 5 and 10 kHz with excellent (M^2 <1.3) beam quality.

Our proprietary XPert™ technology incorporates multiple elements to ensure maximum stability: Newport opto-mechanics and isolators and Spectra-Physics proprietary optical coatings all come together to deliver expert level performance. The result is guaranteed stability with no pulse breathing, minimized short- and long-term noise, and guaranteed average power over hundreds of hours – stability that sets the Spitfire Ace amplifier system in a class all by itself.

THE SPITFIRE ACE ADVANTAGE

- Revolutionary XPert™ technology
- More than 5.0 W of output power
- Superior mode quality (M^2 <1.3)
- Digital synchronization electronics
- Available in 1, 5 and 10 kHz configuration

WEB For more information, visit www.newport.com/spitfireace

LASERS

Spectra-Physics

versaScan L-532S

Green-Pumped Nanosecond OPOs

The Spectra-Physics versaScan L-532 series of 532 nm pumped OPOs are a versatile family of OPOs specifically designed to deliver high energies in the near IR region. They are based on the Spectra-Physics Scan Series OPO designs. Broadband (BB), high energy double pumped (BB-HE), and mid-band (MB) models are available. Optional internal optics separate the signal wave from the idler wave. The OPOs can be automated through the use of a motorization option controlled by ScanMaster software.

The OPOs are tailored for the long pulses of the Spectra-Physics Quanta-Ray® lasers to deliver the highest efficiencies at the lowest fluences. Any Quanta-Ray laser can be used as a pump for this family of OPOs, up to an industry leading 800 mJ at 532 nm, delivering the highest energy OPO output available.

THE VERSASCAN L-532 ADVANTAGE

- 532 nm pumped for high energies in the near IR and visible
- Both broadband and midband options available
- Highest efficiencies for hemoglobin absorption wavelengths
- ScanMaster software for intuitive GUI interface
- Low pump fluences for rugged OPO performance
- Pumped with Quanta-Ray® INDI, Lab, and Pro Nd:YAG lasers

WEB For more information, visit www.newport.com/verscan-L-532S

APPLICATIONS

- Photo-acoustic imaging
- Remote sensing
- LIDAR
- Vibrational spectroscopy
- Medical and biological processes

LASERS

Spectra-Physics

Cobra-Stretch

Amplified Pulsed Dye Lasers

THE COBRA-STRETCH ADVANTAGE

- Wide wavelength coverage from 190 nm to >11 nm
- Spectral linewidths <0.03 cm^{-1} with no intra-cavity etalon
- Small footprint of 770 mm x 494 mm
- Grating Lift option*
- User friendly software, fully LabView enabled
- High output energy, >240 mJ with Quanta-Ray® Nd:YAG at 800 mJ per pulse
- High quality beam profile with capillary cell option
- USB interface
- Touch screen remote

*patent pending

At the heart of the Cobra-Stretch amplified pulsed dye laser system laser system is a newly redesigned grazing incidence resonator designed to utilize the grating's dispersion twice per oscillator round-trip, ensuring narrow linewidths with low ASE. This new resonator design allows for higher efficiencies, permitting as much as 240 mJ of tunable output energy. An optional second grating can be added to the resonator for ultra narrow linewidths below 0.03 cm^{-1} at 570 nm. The resonator allows narrow-line tuning over a broad tuning range without the need for an intra-cavity etalon, thus simplifying the measurement process without sacrificing performance.

New features include optional grating lift for broadest wavelength coverage without realignment, higher efficiencies, greater wavelength accuracy, and a smaller footprint. These new features are in addition to the integrated oscillator / pre-amplifier, quick change dye cuvettes, and integrated amplifier. Amplifiers can be upgraded to the enhanced beam, high pump energy EBP cells. External wavelength conversion units extend the tuning range from the deep UV to the near IR.

WEB For more information, visit www.newport.com/cobra-stretch

MANAGE LIGHT

Newport | Vision IsoStation™

Vibration Isolation Workstations

Easy installation and set-up.
Lab space utilization maximized.

Newport's new Vision IsoStation offers high performance and has more user-friendly features and accessories than any other isolation workstation. Designed to improve ease-of-installation, set-up, and lab space utilization, the workstations are offered with platform sizes from 24 in. x 24 in. up to 36 in. x 72 in. to accommodate the widest range of applications from small bio-instrumentation isolation up to medium size optical investigations that may have previously needed a full sized optical table. The Vision IsoStation are available in two load capacities, 227 kg (500lb gross) and 590 kg (1,300lb gross), delivered by Newport's high-performance I-125 and I-325 Series pneumatic isolators. Both versions reduce transmitted vertical and horizontal vibrations by 85% or more after 5Hz and by more than 95% after 10Hz.

WEB For more information visit www.newport.com/vision

Newport | VIBe

Vibration Isolation Baseplate

An economical and maintenance free solution to protect sensitive instruments from laboratory vibrations

NEW

The VIBe, vibration isolation baseplate, is a compact, effective and easy-to-use platform that significantly reduces vibration that can disturb sensitive instruments. It is available in four standard shapes, two rectangular and two triangular, that have been designed to satisfy the widest range of application needs. All VIBe units feature a black powder-coated steel plate and patented mechanical isolators that provide both vertical and horizontal vibration isolation, there are no air lines, compressors or other accessories needed to provide effective isolation performance.

At the heart of Newport's VIBe are the IB isolator bearings which are available in discrete payload ranges. In total, Newport offers six models of IB bearings that effectively cover a load range from 10 lbs to 100 lbs. This allows users to configure the proper size platform and bearings in the required locations on the baseplate to support and isolate their instrument, even if the load is not uniform.

The isolators feature a 6.7Hz vertical resonance frequency that begins isolating at 9Hz and a horizontal resonance of 6.2Hz with isolation beginning at 9Hz. This is sufficient performance to eliminate more than 85% of vibration noise seen within typical laboratories. The IB bearings attach to the VIBe baseplate using specially designed brackets that feature a threaded aperture to allow leveling adjustment of the VIBe baseplate.

WEB For more information visit, www.newport.com/VIBe

Newport | RPR-N

Non Magnetic Reliance™ Series Non-Magnetic Grade Optical Tables

FEATURES AND BENEFITS

- Constructed from non-magnetic 316 stainless steel
- Damped worksurface eliminates skin resonance
- Damped composite edge finish eliminates sidewall resonance
- Constrained layer core damping attenuates broadband vibration

The Newport M-RPR-N non-magnetic RPR-N Reliance™ Industrial and Educational Grade Optical Table features the material workmanship and quality found in all Newport tables and meets many non-magnetic application needs. The top and bottom skins as well as the trussed honeycomb core are constructed from non-magnetic 316 series stainless steel. RPR-N Series tables offer the same dynamic performance, static rigidity, and thermal stability capabilities as the RPR Series. The RPR-N is an ideal solution for supporting large vacuum chambers or other heavy instruments used in materials research applications. In extreme applications where it is essential that all magnetic materials be removed the RPR-N Series is the best choice due to its 316 non-magnetic stainless steel construction.

RPR-N tables are available in different sizes and thicknesses.

WEB To learn more visit www.newport.com/M-RPR-N

Newport | OTSE

Integrated Overhead Shelf

Front and rear edge guards prevents expensive instruments from accidental falling

Newport's OTSE Integrated Overhead Shelf is the newest product in the SmartTable OTS™ optical table system family. It connects directly to the SmartTable-OTS frame so the entire system has a smaller footprint, more rigid design, and provides more accessibility to the table than other competitive shelf systems. This integration makes moving even the most complex system easy. The overhead shelf features a 59,7 cm (23.5-inch) deep surface and 136,4 kg (300lb) load capacity to provide sufficient room and stability for even the largest instruments. For added convenience, Newport's new OTSE version features a blank front panel for use in applications that may be sensitive to the electrical fields generated by power outlet strips.

"What makes this accessory unique are the specially-designed front and rear edge guards that prevent expensive instruments from accidentally falling onto the table and either causing equipment damage or creating a potentially dangerous laser safety issue," states Warren Booth, Vibration Control Product Manager. "Just one equipment accident could cost thousands in equipment damage, weeks of lost progress, and possible permanent eye damage".

WEB For more information, visit www.newport.com/OTSE

Newport CONEX-AG-LS25-27P

Integrated Linear stage

Connect easily, control simply.

WEB For more information, visit www.newport.com/AG-LS25-27P

Travel 27 mm
Minimum Incremental Motion, MIM 0.2 µm
Bi-directional repeatability 0.3 µm
Maximum speed 0.4 mm/s
Cz, Normal load capacity 3.5 N

CONEX-AG-LS25-27P is a piezo motor linear stage integrated with a closed-loop piezo motor controller/driver. Utilizing the proven Agilis direct drive, piezo-motor technology, the linear stage also has a built-in, direct-read linear encoder, enabling high position sensitivity and repeatability under closed-loop control. Compatibility with NSTRUCT, makes the setup so much easier. The CONEX-AG-LS25-27P is not only compact, but it is also affordable.

Stay tuned for the next installment of these closed loop products.

Newport New XPS Drive Module

Module for piezo-stack based NanoPositioning products

XPS-DRVP1 piezoelectric stack driver is now available!

Specifications

NanoPositioning stages	NPA-D	NPX-D	NPXY-D	NPXYZ-D	NPO-D
Type of motion	Actuator	X	XY	XYZ	Z-Obj
Open-loop travel (µm)	25-100	200-400	100-200	100	140-250
Open-loop resolution (nm)	0.05-0.2	0.4-0.8	0.2-0.4	0.2	0.3 to 0.5
Closed-loop resolution (nm)	0.5 to 2	4 to 8	2 to 4	2	3 to 5
Typ. Repeatability (nm)	16-28	36-75	36-45	30	30-46
Max. Centered load (N)	---	10	75-100	30	---
Max. Axial load (N)	1000 N pushing, 150 N pulling	16-64	110-40	40	5

The XPS-DRVP1 is an XPS controller driver card that can drive piezo-stack NanoPositioning products. These NanoPositioners are differentiated with a 25 pin D-sub connector and like most standard Newport stages, the connector has embedded ESP technology that facilitates setup by uploading all the necessary stage identification and operating parameters to the XPS. The XPS now has the ability to control and drive traditional micro-positioning stages and NanoPositioning stages.

The XPS is a more flexible alternative to the NPC3 or NPC3SG controllers.
The XPS-DRVP1 can drive both open loop and closed loop NanoPositioning stages that are equipped with strain gage position sensors and, with comparable dynamic performance when driven with the NPC3 controller.

WEB For more information, visit www.newport.com/XPS-Drive

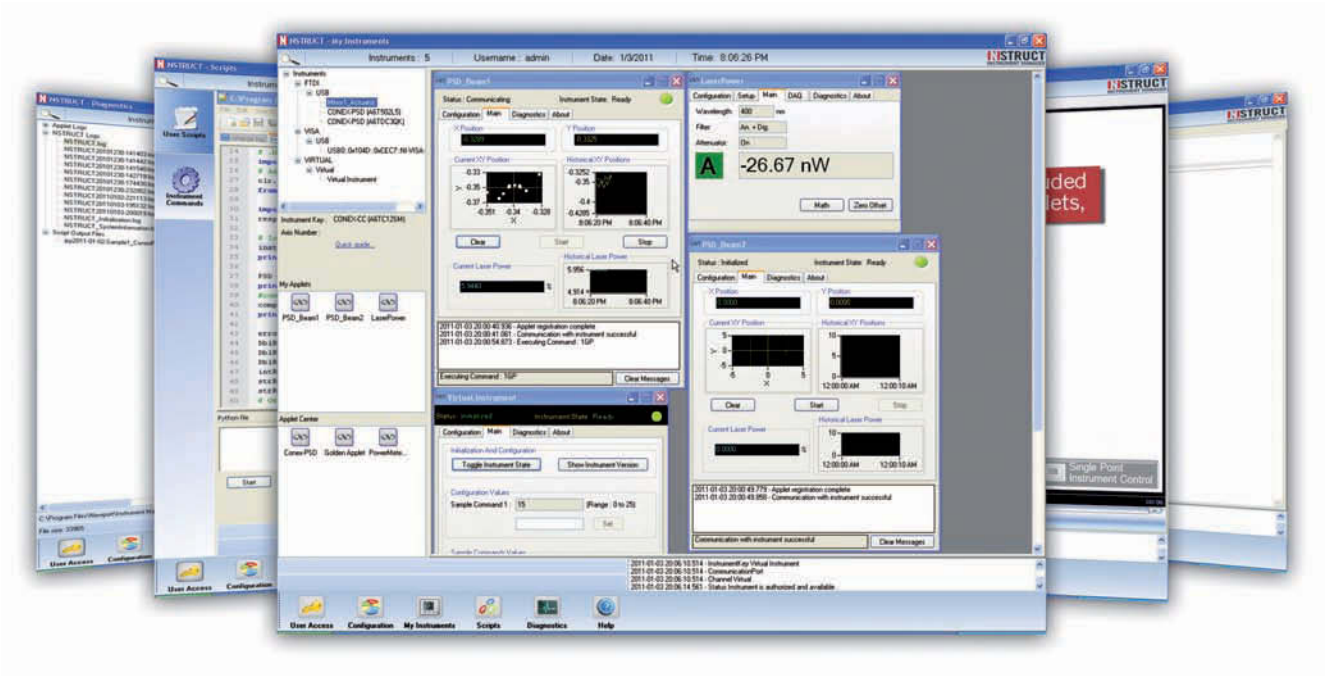




Newport | NSTRUCT™

Instrument manager

New, futuristic instrument management software platform permits easy access to all relevant instrument parameters in one central location.



NSTRUCT™
INSTRUMENT MANAGER

Introducing NSTRUCT™, a futuristic instrument management software platform created by Newport to simplify installation and to provide quicker and simpler instrument and experiment setup and use. Flexible and scalable, the instrument manager is designed with a set of features that create an effective single point control for all the users' instrument needs. The NSTRUCT advanced communication layer provides a stable operating environment, even when using a multitude of instruments in both Windows 7 and XP.

The NSTRUCT framework permits easy access to all relevant instrument parameters in one central location. For added convenience, remote operation is possible over LAN. NSTRUCT instrument manager is designed with the customer needs in mind; it is friendly with National Instruments' LabVIEW, Microsoft C#.NET, and Python, making it a highly customizable instrument management environment.

Newport introduces a new suite of instrument and experiment-oriented software utilities called 'Applets' which are available for download at the company website alongside the main NSTRUCT platform for free. Video tutorials, sample experiment setups, and "How Tos" are also available to facilitate your learning.

WEB For more information, visit www.newport.com/nstruct/

Motion Control Systems

Newport | Testing MEMS-based Accelerometers

Used in GPS Navigation Systems with a Custom 2-Axis Gimbal

Our customer manufactures and provides GPS navigation modules for various end products, such as robots, automobiles and aircraft. An inertial navigation system is a device that includes a computer, accelerometers and gyroscopes. We are all familiar with the everyday use of GPS navigation devices through automobiles or the iPhone, which continuously calculates the orientation and velocity of a moving object and provides data to a computer. Since the velocity calculation needs to be done without an external reference, it is necessary to calibrate and test the accelerometer sensor in various orientations over two rotational axes during production.

Newport's 2-axis Elevation Roll gimbal provides the ideal platform to test and calibrate the MEMS-based accelerometer. The system consists of two high precision RV series rotary stages. The inner stage provides roll motion and the outer stage assembly provides elevation. The gimbal allows the orientation of the accelerometer in various positions, relative to the direction of earth's gravity.

The UUT is inside a 10lb environmental chamber (not provided by Newport).

DS-121003

KEY SPECIFICATIONS:

Elevation Stage: RV240HAHLT with error mapping

Roll Stage: RV160HAHLT-F with error mapping

- Controller: XPS-C2 with (2) XPS-DRV03
- Axis Accuracy: 5 arcsec (0.00139°)
- Axis Min Incremental Motion: 0.0001°
- Axis Repeatability: 0.00011° typical, 0.0002° guaranteed
- Axis Resolution: 0.00005°[rY], 0.000075°
- Axis Velocity: 16°/s
- Axis Travel Range(s): ±170°
- System Orthogonality: 100 µrad

Pricing and Lead Time:
Contact your Regional Sales Manager for pricing and lead time.

Summary:

The UUT is required to rotate about its axis and then rotated relative to gravity. Only point-to-point motion is necessary in this application, and the required accuracy/repeatability can vary depending on the characteristics of sensors. This set up was used as part of the R&D characterisation process.

Newport | Heavy Duty Magnetic Pedestal Rods

- Exceptionally stable 1.5-in. stainless steel design
- Integrated magnetic pedestal base
- Machined-in mounting holes instead of extra adaptors
- Compatible with existing rod clamps and accessories
- English and metric thread options

The SR-Series Magnetic Pedestal Rod System provides the most stable and rigid means for mounting components to an optical table. Constructed from solid stainless steel, the SR Mounting Rods are designed for maximum stability by integrating multiple features into a single part. Rather than having several separate adaptors, these rods have a machined-in pedestal base and multiple machined-in mounting holes. For additional ease of use and functionality, each of the SR-Z rods incorporates graduated height marks and an integrated high-strength magnet in the pedestal base. An all-stainless steel clamping fork is used to clamp these rods on to an optical table.

WEB See our website for more info.
www.newport.com/SR_rods

Newport | Magnetic-Base Beam Block Tool Holders

- Now in two new compact sizes; only 1-in (25.4-mm) wide
- An excellent solution for holding Ball Drivers or tiny Allen wrenches
- Convenient magnetic base for quick placement
- Numbered grid pattern for measuring and setting beam height

Now there are two new, more compact, members of the BB Series of Magnetic-Base Beam Block Tool Holders: the BB-M and BB-S. Like the original BB-L they are multi-function accessories for the lab, combining the features of a beam blocker and beam aligner with a hex key tool holder. These two new models are unique in that they are designed to hold the tiny loose Allen keys which are frequently lost in the lab. The BB-S employs a magnetic tool holder while the BB-M's is non-magnetic. The other useful features of the BB-L are kept; the front surface has a grid pattern of squares which can be used as a reference for aligning or leveling an optical beam. Numbers are printed on the edge of the grid pattern indicating height above the table surface. Promoting eye safety, unused or stray unused or stray beams can be easily blocked. Made from black-anodized aluminum alloy the designs incorporate a magnetic base to allow quick and stable placement on to the stainless steel surface of an optical table.

WEB See our website for more info.
Newport.com/magnetic-BB

New Focus | Vacuum Compatible Stainless-Steel Crossed Roller Bearing Linear Translation Stages

- Ultrastable, sub-micron performance
- Thermally-matched crossed-roller bearings
- Vacuum-compatible to 10-6 Torr

The 9067-X-M-V Vacuum Compatible Stainless Steel Crossed-Roller Bearing Linear Translation Stage is a 1.0 inch (25.4 mm) travel linear translation stage that provides improved stability because the weight of these stainless steel stages is held by the actuator and not the spring. This provides the convenience of being able to use these X-configured stages in the Z configuration. These stages are clean assembled and utilize low vapor pressure grease appropriate for vacuum and clean environments. Micrometers are not included. We recommend using our screw sets or our Model 9353 micrometers. For even more precise control, try our Picomotor™ actuator. M4 and M6 threads.

WEB See our website for more info.
newport.com/9067-X-M-V

New Focus | All-In-One Alignment Stage

- Stable and kinematic
- Four and five axis designs
- Easy front access to all adjustments
- Low platform height
- Standard vacuum compatible versions

These stages were designed to have all of the degrees of freedom needed (two angular and two linear) to align one optical axis to another. An additional degree of freedom is provided in the five-axis stages which provide focus. Since there is only one actuator or constraint for each degree of freedom, these stages operate slightly differently than more conventional ones. In our kinematic stages, two actuators are used to position a side of the moving plate. Therefore, if you want pure translation, simply adjust both screws the same amount. A single screw rotates the plate about the opposite motionless actuator. And if you want to rotate the plate around its center, adjust both screws in opposite directions.

WEB See our website for more info.
newport.com/All_in_one_alignment_stages

MEASURE LIGHT

Newport | LDKIT Laser Diode Control Kits

The innovative Newport Laser Diode Control Kits include a laser diode driver, a temperature controller, a laser diode mount, cables and accessories. The convenient new control kits enable quick setup for running a wide variety of laser diodes. They are ideal for both high power laser diodes and the popular TO-can lasers, as well as butterfly laser packages.

The Model LDKIT series Laser Diode Control Kits offer numerous benefits to customers:

- Maximum user flexibility with minimum complexity
- Simpler product selection and ordering process
- One source solution from a single vendor guaranteeing product performance, and compatibility
- Making initial setup installation easy
- Making repeat order or setup simple

Each kit consists of a laser diode driver, temperature controller, a laser mount, cables, a user manual, and additional accessories.

WEB See our website for more info.
www.newport.com/LD-Kits

To review the complete Newport laser diode instrument selection guide, please go to:
www.newport.com/LD-Guide

Newport | Power Measurement Kits, PMKIT Series

- Kits include an optical power meter, a detector, and a mounting assembly
- Choose from UV, Si, wand Si, Ge, or thermopile detectors
- Wavelength ranges between 200 nm to 10.6 um, up to 10 watt power
- Simple product selection and ordering processes

Newport's industry renowned optical power meters and detectors are now available as low cost bundles, simplifying product selection and order process. The kits are especially useful for those who are new to optical measurements and who need simple measurement tools. Each kit consists of Newport's economical model 1916-R model Optical Power Meter and various types of detectors, either an 818 series photodiode detector or a thermopile detector, and necessary mounting assemblies. The 818 series detectors are equipped with a removable OD3 attenuator. For power density ranges below 1 mW/cm2, we recommend to remove the attenuator to maximize the signal to noise ratio. Fiber adapters are separately available for purchase.

WEB For more information visit www.newport.com/PMKIT

Newport | Dual Channel Virtual Optical Power/Energy Meter, 842-E-USB

- Compatible with both 818P and 818E Series
- Full Statistics Package
- USB interface with Cable Included
- 2.4 V to 24 V External Trigger
- Fast 10 kHz/Channel Data Transfer Rate
- Time plot

The all new 842-E-USB is a powerful dual channel virtual optical power/energy meter, compatible with both the 818E Series Pyroelectric Detectors and the 818P Series Thermopile Detectors. After installing the software, your computer turns into a power meter. The device is powered via the USB cable, which is provided with each unit. With the similar software application as that of 841-P-USB, the user can take the full control of the meter within minutes. The impressive high data transfer rate allows downloading data at 10 kHz/channel. An external trigger is available for 2.4 V to 24 V trigger to synchronize the data acquisition to it.

- Compatible with both 818P and 818E Series
- Full Statistics Package
- USB interface with Cable Included
- 2.4 V to 24 V External Trigger
- Fast 10 kHz/Channel Data Transfer Rate Time

The software features include a complete statistics package including Min, Max, average, standard deviation, root mean square, point-to-point stability, pulse count, and repetition rate, a line plot and a histogram, and options for saving data, saving statistics, or both.

WEB For more information visit www.Newport.com/842-E-USB

Newport | Handheld Laser Power Meter, 1917-R

- Newest power meter for laser alignment
- Ultrafast simulated analog needle
- Large LCD display for easy reading
- Three different needle displays
- High/Low value indicator
- Low power consumption
- Compatible with Newport 818, 918D, and 818P series detectors

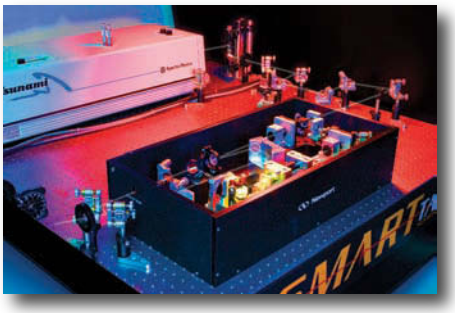
The all new 1917-R Laser Power Meter was designed to be the best tool in industry for laser alignment. The ultrafast digital needle design with a large 77 X 58 mm LCD display and a backlight (enabled with an AC adapter) reacts to laser power change even faster than a standard analog power meter, thereby achieving optimal alignment more quickly and easily. The user can choose one of three different display modes for the most appealing view. The display area is conveniently divided into the analog needle and the digital display, so use the needle for a coarse alignment and use the digital display for the final fine tuning and data recording.

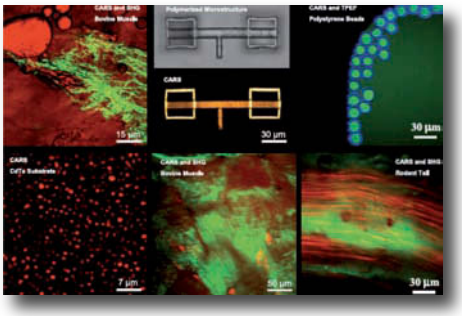
This new laser power meter is a perfect replacement for the obsolete Model 407A, when combined with the thermopile detector 818P-030-19. Unlike Model 407A, 1917-R is compatible with all 818P series thermopile detectors as well as 818 and 918D series photodiode detectors.

WEB For more information visit www.newport.com/1917-R

PHOTONIC APPLICATION

Newport | Wavelength Extension Unit (WEU) for ultrafast oscillators





Newport's new wavelength extension unit is a pre-aligned turn key solution for various spectroscopy and microscopy applications. This device can be easily integrated with ultrafast light sources to perform CARS spectroscopy and CARS microscopy. It can also be integrated with two-photon microscopes to add CARS modality to enhance the imaging capabilities of microscopes.

This wavelength extension unit uses a photonic crystal fiber to generate a broadband supercontinuum light source that can be used as the probe beam in pump probe spectroscopy, Stokes beam in CARS, etc., depending upon the application. The high performance optical and optomechanical components make this device robust and stable.

Typical Specifications:

- Pump source: Femtosecond oscillator 800 nm, 50-200 fs, 200-500 mW
- Spectral Range: 900 -1100 nm
- Output power: 50-100 mW
- Beam quality: TEM00 Mode, M2<1.1

WEB To learn more visit www.newport.com/WEU

Application Notes:

Download Newport application notes at www.newport.com/application_notes

App Note 43: Synchronization of Two Spectra-Physics Spitfire Pro Amplifiers for Pump-Probe Experiments

App Note 44: Terahertz Spectrometer based on Generation of Ultrafast Terahertz Pulses in Air Plasma

NEW

2011-2012 Newport Resource Coming soon!

Newport is proud to announce a new resource will be available in early summer. The new resource will include products for all Newport brands including New Focus™, Oriel® Instruments, Richardson Gratings™ and Spectra-Physics® Lasers. Be sure to check **www.newport.com/resource2011** for early registration announcements. Pre-registrants who apply for a new catalog between April 11 and May 9, 2011 can enter to win free gifts.

Meet Us at the Following Events:

GERMANY:

April 12: Laser Materials Processing of glass, Erlangen

April 17-20: FOM'11, Focus on Microscopy, Konstanz, Stand 12

May 3-6: CONTROL, Stuttgart, , Hall 1, Stand 1204

May 23-26: LASER World of Photonics, Munich, Hall B1 Stand 560

NETHERLANDS:

April 20-21: MOCON, Brabanthallen, 's-Hertogenbosch, Netherlands, Stand E1030

May 23-25: ECONOS, Twente, Netherlands

ITALY:

EUSPEN, **May 23-26**, Como, Italy, Stand 50

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